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A NEW FUNGUS, PHIALOPHORA VERRUCOSA, PATHOGENIC FOR MAN

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The fungus here briefly described was isolated from a chronic skin lesion on the buttock of a man 22 years old. The more detailed description may be found in a current number of the *Journal of Medical Research.*

The fungus grows on all ordinary laboratory media as a brownish-black, felt-like mycelium composed of ramified, septate hyphae which are cylindric, fairly straight, and composed of thick-walled cells $4–25 \times 2–6\,\mu$. Their protoplasmic content is finely granular and in it are embedded numerous fat droplets of varying size. By staining, a definite nucleus can be demonstrated in each cell as shown in the accompanying figure.

Sclerotic cells are formed under conditions which are unfavorable to normal growth, and are also produced in tissues and on hydrocele agar. These sclerotic cells may undergo a process of septation in more than one plane and in this way form small sclerotium-like cell-masses.

Reproduction, so far as known, is entirely asexual, and takes place by two types of conidial formation. The type of conidial formation found in cultures where conditions are most favorable for luxuriant growth is semi-endogenous in character. It occurs, as a rule, on specialized, short, lateral branches of the aerial hyphae, although at times the end segment of a hypha may become a conidium bearer. As a rule, these branches consist of a single sporogenous cell, although occasionally they may be composed of two or three cells from which the sporogenous cells may arise terminally and laterally. The sporogenous cells may arise singly or on opposite sides of the same vegetative cell, as indicated in the figure, and are usually ovoid in shape, forming during the process of fructification a shallow, round cup at the distal end. Into this cup the conidia are pushed as a result of the successive proliferation of the sporogenous cell below. After reaching maturity a septum is formed between the conidium and the parent cell and another conidium is produced. Although these spores are set free as soon as they are formed and are never produced in coherent chains, they are not at once scattered, but remain coherent owing to the presence of a gelatinous material which holds them together. A dozen or more may thus cohere to the cup-like extremity of the sporogenous cell forming a compact, globose mass. This "cup and ball" habit is very characteristic and the whole bears a close resemblance to a sporangium filled with endogenous spores.

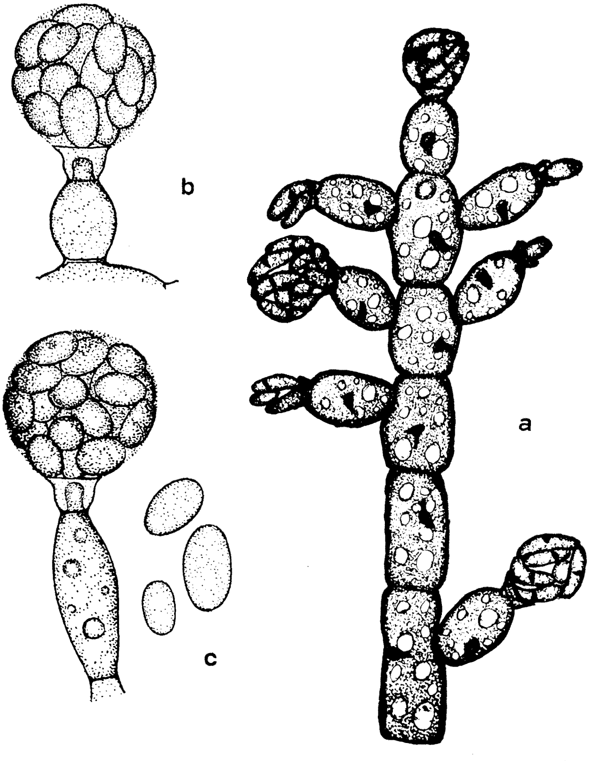

FIG. 1. *Philophora verrucosa* Medlar. *a*, stained specimen showing conidia formation and cellular detail; *b, c,* after Thaxter, showing detail of sporogenous cell and conidia.

The individual conidium has a definite wall which is at first hyaline or faintly yellowish and becomes brownish with age, a finely granular protoplasm in which are embedded a few small fat droplets, and a definite nucleus. It varies from 4 μ to 6 μ in length and 1 μ to 3 μ in breadth.

The second type of conidial formation is found in tissues and in the depths of certain media, such as hydrocele agar. Here the conidia are formed as budding processes from single sclerotic cells, from the individual cells of the sclerotia, and from the end of short terminal and lateral branchlets. They may be single or in chains of two to six. The structure is similar to that of the conidia formed on the aerial hyphae, but the form is distinctly more ovoid.

Because the sexual reproduction, if there is any, of this fungus is unknown it will necessarily have to be classed among the Fungi Imperfecti. The color will place it under the Dematiaceae. So far as can be determined, there has never been described a fungus, either saprophytic, parasitic, or pathogenic for man or other animals, which corresponds closely to this form.

Professor Thaxter has suggested that the fungus should be classed under the sub-division Chalareae of Saccardo's Classification and should be the type species of a new genus, since the successive separation of the conidia and their coherence in a mucous mass which remains adherent to the cup-like apex of the sporogenous cell does not appear to be characteristic of any described genus in this section.

The name *Phialophora* (small shallow cup bearer) is proposed for the genus, and the specific name *verrucosa* is selected, as the lesion clinically resembled verrucous tuberculosis.

The fungus is pathogenic for rats and mice, producing lesions similar to those in man. Its natural habitat is unknown.

The determinative characteristics, as suggested by Professor Thaxter, of the new genus and new species are here given.

Phialophora gen. nov.

Mycelium of brown, septate, cylindric hyphae which show a tendency to cohere in rope-like strands, the ultimate branches and branchlets tending to become moniliform. Aerial conidia produced by specialized sporogenous cells which arise terminally or laterally from the branches: abjointed at maturity, simple, formed through successive proliferation into the cup-like termination of the sporogenous cell to which they cohere in a globose, gelatinous mass. Sclerotic cells and spores in monilia-like chains are also produced in the substratum.

Phialophora verrucosa sp. nov.

Sporogenous cells short, ampullae-form or more elongate, usually terminal or irregularly distributed near the ends of the ultimate branchlets, the lips of the terminal cups spreading; spores ovoid to ellipsoid, somewhat variable in form and size, usually about 4–5 × 2–3 μ; hyphae 2–6 μ in diameter.

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